DETAILED ACTION

1. All outstanding objections and rejections made in the previous Office Action, and not repeated below, are hereby withdrawn.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

3. Upon updating the searches, a relevant new reference has been uncovered. This new reference has been used in the rejections below.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/15/10 has been entered.

Claim Rejections - 35 USC § 112

5. Claims 32 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. As to claim 32, mono-methacrylate is not art recognizable. The chemical name appears to be incomplete. Specifically, mono what? Mono-methacrylate implies that that only one methacrylate is attached to a diradical group, however no group is specified. Therefore, chemical name "mono-methacrylate" would not be understood by one of ordinary skill in the art absent additional information.

7. New claim 43 depends on canceled claim 1, which renders claim 43 indefinite. Specifically, it is not clear what pending claim, claim 43 depends upon. In the instant action, claim 43 will be treated as depending upon independent claim 22.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 22, 23, 24, and 39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0551796 (herein Lo).

10. As to claim 22, Lo discloses a particulate aqueous suspension (abstract) comprising a liquid phase (water, see abstract) having suspended therein a solid (solid polymeric substance, see abstract) substantially insoluble (water insoluble, abstract and page 6, lines 45-51) in said liquid phase. The suspension is the reaction product of (abstract):

- A polymeric stabilizer having hydrophilic moiety (maleic anhydride) and a hydrophobic moiety (styrene) and comprising a plurality of vinylic monomers (note that maleic anhydride and styrene are vinylic monomers). Note that maleic anhydride contains a functional group (anhydride) capable of undergoing a condensation reaction (interfacial polycondensation). See abstract, page 5, lines 34-46 and examples.
- A substance (hexamethylenediamine) contained in the liquid phase capable (water soluble, note that Lo requires the amine to be soluble in water, if not the amine salt is used). See abstract, examples and page 6, lines 13-36.
- The ratio of the polymeric stabilizer (wall) to the suspended solid is preferably 5 to 20 wt%). Thus 1:20 to 1:5 pbw, which is within the claimed range. See page 6, lines 37-39. Also note the examples, which utilize amounts of up to 1:50, all of which are well within the claimed ranges.

11. As to claims 23 and 40, the suspended solid comprises an agrochemical solid. See abstract, the list of agrichemicals on page 4, line 1 through page 5, line 25 and examples. Specifically, note Atrazine (page 4, line 12), which is a solid. Note that Lo circumvents the issues associated with solids via heating the agrichemical up to the

melting point for the polycondensation reaction, however the agrichemical is a solid at room temperature and in the final product. See page 3, lines 40-48.

12. As to claim 24, Lo reports that capsules (solids) with a size of 5 microns. See examples.

13. As to claim 39, Lo discloses that the ratio is 1:20 to 1:5 pbw, which is within the claimed range. See page 6, lines 37-39. More specifically, note the examples, which utilize amounts of up to 1:50, all of which are well within the claimed ranges.

14. As to claim 43, note the continuous phase is a single liquid (water) and contains no other phases. See abstract and examples, also see page 3, lines 40-48.

15. In view of the above discussion, it is evident that the cited present claims stand anticipated over the prior art.

Claim Rejections - 35 USC § 103

16. Claims 22-26, 28-32, 34 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,262,152 (herein “Fryd") in view of WO 02/082900 (herein Crooks).

17. As to claim 22-23 and 40, Fryd discloses an aqueous suspension (see abstract, col. 1, lines 10 through col. 2, line 60 and examples) comprising:

- A liquid phase having suspended a substantially insoluble solid phase. The particles may comprise agrichemicals (insecticides). See col. 3, lines 28-35.

(i) A polymeric stabilizer comprising hydrophilic and hydrophobic moieties and further comprising a functional group (e.g. an amine that is crosslinked with an isocyanate, see table 1). See abstract and examples.

(ii) An isocyanate in the liquid phase. See abstract, examples, table 1 and col. 1, lines 10 through col. 2, line 60. Note the diisocyanates listed in col. 6, lines 10-14.

Fryd generally embraces greater amounts of solid than polymer. See examples. Furthermore, Fryd discloses that the amount is dependent on the application (e.g. inks, agricultural compounds or cosmetics). See col. 3, lines 7-35. Furthermore, Fryd teaches that the polymeric dispersant is used to control the dispersability of the solid. See col. 3, lines 36-45.

However, Fryd is silent on disclosing the a ratio of less than 1:5 polymer to solid.

Crooks teaches similar aqueous suspensions. See abstract and examples. Crooks teaches that, in agrichemical compounds, the amount of polymeric stabilizer is preferably 100 pbw to 500 pbw (at least 1:5) agrochemical ingredient in order to reduce cost and be environmentally friendly. See page 5, lines 15-32 of Crooks.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the compositions of Fryd via utilizing amounts of polymeric stabilizer to agrichemical compound in ratios of 1:5 or less as taught by Crooks because one would want to reduce cost and be environmentally friendly. See page 5, lines 15-32 of Crooks.

18. As to claims 25-26, 28-32, 34 and 41, Fryd discloses that the polymer may comprise hydrophilic, hydrophobic and crosslinker groups. See abstract and examples. Specifically, hydrophobic monomers such as methyl methacrylate (see col. 4, lines 44-59 and examples), hydrophilic monomers (such as PEGMA or methacrylic acid, see col. 4, line 60 through col. 5, line 10 and examples), and crosslinkable monomers such as hydroxy ethyl methacrylate (note that hydroxy and amino are interchangeable function groups) and/or amino ethyl methacrylate (see col. 5, line 38 through col. 6, line 33 and examples). For example, see example 4, which discloses a polymer that is deduced to have an e of about 0.4, an f of about 0.4 and a g of about 0.2. Also see, example 2-3, which discloses an example wherein e is about 0.3. As to the residue (*), it is noted that the polymers are polymerized via radical polymerization, thus they have residues from the polymerization process at the ends. See examples. Fryd is open to several initiators, which may be hydrophilic. See examples.

19. As to claim 39, as noted above, Crooks teaches ratios of 1:5 or less and generally embraces amounts wherein the polymer is “low” in order to reduce cost and environmental impact. See page 5, lines 15-32. One would have been motivated to utilize any amount within those ranges, including values that fall within the cited ranges. Furthermore, one have been motivated to optimize the amount of ingredients for the to reduce cost and environmental impact as mentioned above. See page 5, lines 15-32.

20. As to claim 42, as mentioned above, Fryd discloses the that the polymer may comprise methyl methacrylate and amino ethyl methacrylate (hydroxy ethyl methacrylate and specifies that hydroxy and amino are interchangeable function

groups). see col. 5, line 38 through col. 6, line 33 and examples. It is also noted that X is not required (e=0).

21. As to claim 43, Fryd teaches that the continuous phase is only water. See abstract and examples.

22. Claims 27 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,262,152 (herein "Fryd") in view of WO 02/082900 (herein Crooks) and Jankova et al. Macromolecules, 1998, 31, 538-541 (herein "Jankova").

The discussion with respect to Fryd as set forth in paragraphs 16-21 above is incorporated here by reference.

23. As to claim 27, Fryd is silent to the specific pegylated initiator of formula II, However Fryd is open to various initiators and reaction conditions. See examples.

Jankova discloses the use of hydrophilic initiators such as PEG-Br (see examples and paragraphs under introduction on page 538). Jankova also discloses that the initiator is useful in preparing amphiphilic block copolymers. See page 538, first paragraph.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to utilize the initiator of Jankova in the polymer of Fryd because one would want to utilize initiators known to provide useful block copolymers with pegylated groups. See page 538, first paragraph.

24. As to claims 35 and 37-38, the polymer may be a block copolymer with hydrophilic and hydrophobic blocks. See col. 3, lines 35-59 and examples.

25. As to claim 36, Fryd discloses examples (see examples 1-4), which fit the formula wherein f + g is 0.2 to 1.0 and g:f is from 1:2 to 1:10.

Interview Summary

26. The interview on October 13, 2010 is acknowledged. Specifically, applicant argued the differences between Heming and the claimed invention. See the Interview Summary filed concurrently with the instant Office Action for more information.

27. Note that the rejections using Heming have been withdrawn in light of the arguments in the interview and the response. Specifically, upon careful consideration of Applicant's arguments, it is noted that Heming teaches that the crosslinking agents are soluble in the discontinuous phase (not the aqueous phase) and the cores are generally liquid (oil in water emulsions).

Response to Arguments

28. While new grounds of rejection are set forth above, the following discussion is given in response to those arguments of applicants that still apply to references or rejections over references that are being carried over from the preceding action. Arguments pertaining to any reference or rejection not being carried over are rendered moot and need not be addressed.

29. *Applicant argues that Fryd is silent on the ratio of polymer to solid.* The examiner acknowledges that the prior art is silent to the specific ratio, however, as stated in the

prior art rejections above, Fryd teaches the amount of particle (solid) "is not critical to the invention and can be as desired for the end use application" (3:28-35). Furthermore, Fryd teaches that the polymeric dispersant (polymer) is used to control the dispersability of the solid (3:36-45). Moreover, Fryd in view of Crooks teaches the claimed invention, since Crooks gives motivations for lowering the polymer to below 1:5. Thus, the polymer and solid are result effective variables, and "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Also see MPEP 2144.05.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK S. KAUCHER whose telephone number is (571) 270-7340. The examiner can normally be reached on Monday to Thursday, 8:00 AM to 7:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK S KAUCHER/
Examiner, Art Unit 1764

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1764